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NOTES ON TWO SPECIES OF NEMATODES [*GONGYLONEMA INGLUVICOLA* RANSOM, 1904, AND *CAPILLARIA STRUMOSA* (REIBISCH, 1893)] PARASITIC IN THE CROP OF CHICKENS

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In making postmortem examinations of Philippine chickens, two species of nematode worms have been found in the walls of the crop. Both of them live in winding burrows in the mucosa and are never found free in the lumen. The larger of the two forms which was found in about 40 per cent. of all the chickens examined, has been identified as *Gongylonema ingluvicola* Ransom, 1904. The second and more slender species I have recognized as *Capillaria strumosa* (Reibisch, 1893). It was found in about 30 per cent. of the chickens dissected.

Gongylonema ingluvicola Ransom, 1904

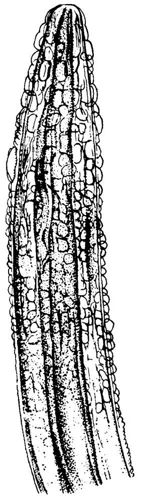
This species was described by Ransom from the crop of a chicken from Key West, Florida. It is the only species of this genus which has been described from birds. On superficial examination of my material I was inclined to believe that the Philippine species was different from *ingluvicola;* however, after a careful study of a number of specimens and a comparison of the measurements of the different parts of the body with Ransom's description, I do not feel justified in separating this form from that species.

The body is white in color and the cuticula is annulated, the annulations measuring 10 to 11μ in breadth in the females and 6 to 7μ in the males. The arrangement and extent of the "cuticular bosses" at the anterior end of the body in my specimens (see Fig. 1) is almost identical with Ransom's description and figure. The "transversely elongated, large, plate-like shield" through which the excretory pore opens seems, however, to be considerably wider in my specimens than is indicated in Ranson's figure, and projects considerably from the surface of the body. The lateral membranes, which start a short distance back of the cervical papillae, are short and inconspicuous.

The following table shows graphically the measurements of Ransom's original specimens as compared with the Philippine form. My measurements are the maximum and minimum of seven adult females and the same number of males.

TABLE 1

Gongylonema ingluvicola	Male		Female	
	Ransom	Wharton	Ransom	Wharton
Length of body	17-19 mm.	17-20 mm.	32-45 mm.	40-55 mm.
Breadth of body	250μ	224-256μ	400-490μ	320-420μ
Extent of cuticular bosses	575-680μ	480-496μ	1.3-2.6 mm.	1-1.36 mm.
No. of rows of bosses	16	?	20-24	20-24
Distance of cervical papillae from anterior end	100μ	100-125μ	135μ	120-150μ
Distance of excretory pore from anterior end	300μ	368-400μ	450μ	450-480μ
Length of anterior part of esophagus	280-400μ	400-480μ	540μ	575-608μ
Length of posterior part of esophagus	3.2-3.3 mm.	3.2-3.3 mm.	5-6 mm.	4.5 mm.
Distance of anus from tip of tail	225-275μ	264-275μ	165-215μ	240-288μ
Distance of vulva from tip of tail			2.5-3.3 mm.	3-3.5 mm.
Length of vagina			13 mm.	11-14 mm.
Eggs in vagina			50 x 36μ	52.9 to 56.7 x 37.8μ
Width of tail, including alae	225μ	208-240μ		
Length of right ala	500-575μ	560-736μ		
Length of left ala	600-700μ	720-800μ		
Left spicule	17-19 mm. by 9μ	17-19 mm. by 7-9		
Right spicule	100 x 15μ	120 x 20μ		



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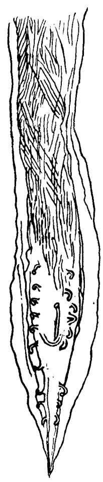

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Fig. 1.—Lateral view of anterior end of female *Gongylonema ingluvicola*.
Fig. 2.—Posterior end of male showing regular arrangement of genital papillae and the right spicule. (Drawings by Castro. Camera lucida outlines.)

The number and arrangement of the genital papillae of the male, which is generally very regular in members of this genus, show marked variations in this species. Ransom says "The number of genital papillae is rather variable and they are not symmetrically arranged. In the specimens examined the number of preanal papillae on the left side was 5 to 7, on the right side 4 to 4, and the number of postanal papillae 3 to 4 on the left side, 4 on the right side." I have carefully studied the papillae in 14 of my specimens and found the number as follows:

TABLE 2.—ARRANGEMENT OF ANAL PAPILLAE

	Preanal		Postanal		
	Rt.	Lt.	Rt.	Lt.	Total
No. 12	7	6	4	4	20
No. 1	6	6	4	4	20
No. 2	6	6	4	4	20
No. 4	6	6	4	4	20
No. 10	6	6	4	4	20
No. 11	6	6	4	4	20
No. 14	6	6	4	4	20
No. 5	5	5	5	5	20
No. 6	5	5	5	5	20
No. 3	5	5	5	4	19
No. 9	5	5	4	4	18
No. 7	6	2	4	4	16
No. 8	4	6	3	2	15
No. 13	0	7	3	3	13

In Specimens 1, 2, 4, 10, 11, 14, 5, 6 and 9 the papillae are arranged symmetrically in pairs (see Fig. 2). In the other specimens which appear to be asymmetrical, this appearance is the result of the suppression of one or more papillae on a side as in Nos. 3, 7 and 8, or the addition of an extra papillae anteriorly as in No. 12. It would require the study of a much greater series than I have in my possession at the present time to determine whether or not ten pairs of papillae is the normal number, but the preponderance of this number and arrangement in my series is, I think, worthy of note. The slightly greater length, in my specimens, of the lateral alae as shown in Table 1 can be accounted for by the greater body length. The size and shape of the spicules is practically the same as in Ransom's specimens. The extreme length of the left spicule is a characteristic which easily distinguishes this form from other species of the genus.

Geographical distribution. All of my specimens have come from chickens which were raised in or very close to Manila, so I am not able to state whether this form is of general distribution in the Islands.

Capillaria strumosa (Reibisch, 1893)

This species has been reported from *Phasianus colchicus* and *Gallus domesticus*. On account of their extreme slenderness and the tortuous windings of their burrows it is very difficult to obtain whole specimens. I have several whole females, but have not succeeded in obtaining any complete males.

The length of the females runs from 40 to 55 mm., and they are 100 to 120μ thick. The males are estimated to be from 17 to 25 mm. long and 70 to 80μ in thickness. The cuticula is striated transversely and the cephalic extremity is surrounded by the characteristic cuticular dilation. The oesophagus in the female is from 7 to 8 mm. long and the vaginal opening is situated just at the end of the oesophagus. The eggs in the vagina measure 60 to 64μ by 26 to 28μ. The male is provided with two projections around the anal opening.

Neither one of these forms is often found in any great numbers in the chickens I have examined, and as far as I could see they do not cause any pathological conditions of importance.

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